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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/509,160      | 09/28/2004  | Masayoshi Ichiki     | KSM-0226            | 5098             |

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| EXAMINER |
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VANOY, TIMOTHY C

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1754

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| MAIL DATE | DELIVERY MODE |
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08/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/509,160

Applicant(s)

ICHIKI ET AL.

Examiner

Timothy C. Vanoy

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-10 and 13-18 is/are allowed.
- 6) ☒ Claim(s) 1-4, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :Nov. 4, 2004 and Sept. 28, 2004.

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Oath/Declaration*

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration filed on Apr. 29, 2005 is defective because it omits the names, signatures, dates, citizenships, residences and post office addresses for all of the inventors.

### *Specification*

Applicants are reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. **It is important that the abstract not exceed 150 words in length** since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

*In this application, the abstract exceeds 150 words in length and is, therefore, too long.*

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) In claim 4, it would seem that a zirconium nitrate or zirconium chloride (not the zirconium sulfate of claim 4) would be basified to form the zirconium hydroxide precipitate. Alternatively, if the zirconium sulfate is already present, then why basify it to form the zirconium hydroxide precipitate? Merely forming the zirconium hydroxide precipitate is not going to produce the catalyst of applicants' claim 1. Claim 4 requires a sulfation step for the zirconium hydroxide intermediate (but the claim omits this). Any amendment of claim 4 is required to be checked against applicants' claim 3 so that amended claim 4 is not a functional or literal duplicate of claim 3.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Pat. 5,780,383 to Hollstein et al.

Col. 4 Ins. 19-24, Ins. 39-44 and Ins. 48-52 in the Hollstein et al. patent discloses a sulfated zirconia catalyst that may optionally contain either an oxide of molybdenum or an oxide of tungsten and that has an acid strength  $H_0$  of less than -18. Col. 4 Ins. 19-24, Ins. 39-44 and Ins. 48-52 in this Hollstein et al. patent also discloses a sulfated titania catalyst that may optionally contain either an oxide of molybdenum or an oxide of tungsten and that has an acid strength of  $H_0$  of less than -18.

Example 1 in col. 6 in this Hollstein et al. patent discloses that the sulfated catalysts were made by preparing an aqueous solution comprising zirconyl nitrate; preparing an aqueous solution of ammonium hydroxide; mixing together the zirconyl nitrate solution and the ammonium hydroxide solution and allowing them to react together to form what appears to be the same zirconium hydroxide precipitate; filtering off the zirconium hydroxide precipitate and drying and calcining it; the calcined zirconium hydroxide precipitate is added to a beaker containing sulfuric acid and allowed to soak for 2 hours; the sulfuric acid solution is decanted off and the resulting sulfated zirconia is calcined at 500 °C for 4 hours to obtain the product sulfated zirconia.

Claims 5-10 and 13-18 have not been rejected under either 35USC102 or 35USC103 because U. S. Pat. 5,780,383 does not teach or suggest the limitations of these claims.

The following references are made of record:

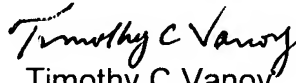
U. S. Pat. 5,191,139 disclosing sulfate-activated Group IV oxides;  
U. S. Pat. 5,510,309 disclosing an acidic zirconia modified with tungstate;  
U. S. Pat. 5,780,382 disclosing an acidic zirconia modified with tungstate, and  
U. S. Pat. 6,177,596 B1 disclosing a method for making sulfated zirconia by using zirconium oxychloride as a starting material; adding ammonia solution to the zirconium oxychloride to form zirconium hydroxide precipitate, and then sulfating the zirconium hydroxide, and then calcining to produce the sulfated zirconia catalyst product (please see the Example in columns 5 and 6).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Timothy C Vanoy  
Primary Examiner  
Art Unit 1754

tcv